

Speckled Mountain Quadrangle, Maine

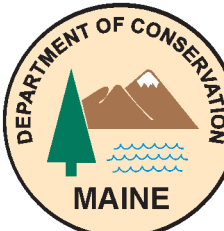
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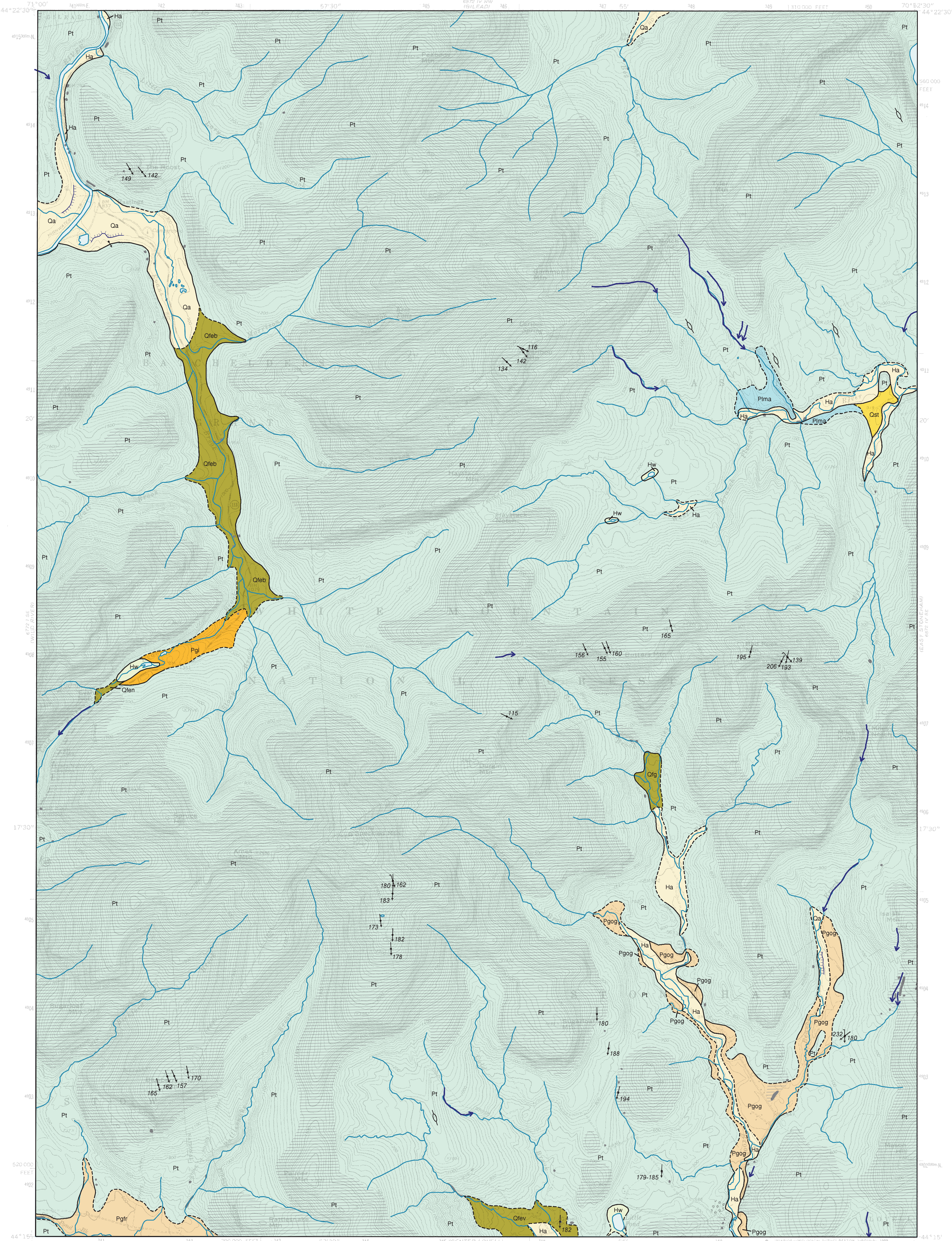
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For additional information,
see Open-File Report 03-5.

Surficial Geology



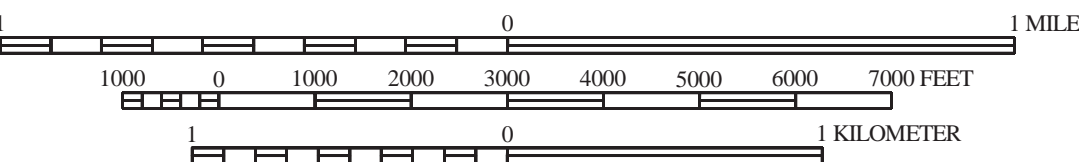
SOURCES OF INFORMATION

Surficial geologic mapping of the Speckled Mountain quadrangle was conducted by Woodrow B. Thompson in 2001 for the Maine Geological Survey mapping program. This map was funded from the MGS/USGS STATEMAP cooperative (award no. 01HQAG0090).



Quadrangle Location

SCALE 1 : 24,000



CONTOUR INTERVAL 20 FEET



Topographic base from U.S. Geological Survey Speckled Mountain quadrangle, scale 1:24,000 using standard U.S. Geological Survey topographic map symbols.

The use of industry, firm, or local government names on this map is for location purposes only and does not impute responsibility for any present or potential effects on the natural resources.

- Ha** Stream alluvium - Sand, gravel, silt, and organic sediment. Deposited on flood plains of modern streams. Unit includes some wetland areas.
- Hw** Wetland deposits - Peat, muck, silt, and clay. Deposited in poorly drained areas.
- Qst** Stream terrace - Sand and gravel terrace at confluence of Miles Brook and West Branch Pleasant River. May have resulted from erosion of an originally higher glacial deposit as ice recession caused lowering of stream base-level farther down the West Branch valley (in East Stonham quad).
- Qa** Stream alluvium - Gravel and sand deposited by Evans Brook, Wild River, and Bog Brook. Ages probably range from early postglacial (higher deposits) to recent on modern flood plains adjacent to the streams.
- Qfeb** Evans Brook fan complex - Series of coalescent alluvial fan deposits formed at the mouths of tributary streams entering the Evans Brook valley. Composed mostly of coarse gravel.
- Qfen** Evans Notch fan - Bouldery debris fan, formed by slope wash or avalanching on the west side of Evans Notch.
- Qfg** Great Brook fan - Coarse stream gravel deposited in early postglacial to recent time along the steep headward part of the Great Brook valley.
- Qfev** Evergreen Valley fan - Gravel and sand deposited in fan by glacial and/or postglacial stream discharge from Cold Brook valley and the unnamed valley west of Cold Brook.
- Plma** Glacial Lake Mason deposits - Gravel and sand deposited in or graded to an ice-dammed glacial lake in the West Branch Pleasant River valley. Lake level probably was controlled by a spillway at ~ 990 ft elevation, northeast of Bad Mountain in East Stonham quad.
- Pgog** Great Brook deposits - Sand and gravel. Outwash deposited by glacial streams in Great Brook valley.
- Pgfr** Rattlesnake Brook fan - Gravel and sand deposited in outwash fan. Formed mainly by glacial meltwater discharge from the Rattlesnake Brook valley and smaller valleys on south side of Blueberry Mountain. May have been enlarged by postglacial stream activity.
- Pgl** Ice-contact deposits - Sand and gravel deposited by glacial meltwater flowing southward through Evans Notch. May include glaciofluvial (kame/esker) deposits and/or deltaic sediments deposited in a small glacial lake ponded between the ice margin and the spillway at the notch.

- Pt** Till - Loose to very compact, poorly sorted, massive to weakly stratified mixture of sand, silt, and gravel-size rock debris deposited by glacial ice. Locally includes lenses of water-laid sand and gravel.
- Bedrock outcrops/thin-drift areas** - Ruled pattern indicates areas where outcrops are common and/or surficial sediments are generally less than 10 ft thick (mapped partly from air photos). Dots show individual outcrops.
- Contact** - Boundary between map units. Dashed where inferred.
- Scarp** - Hachured line shows scarp between adjacent levels of alluvial deposits. Hachures on downslope side.
- Glacially streamlined hill** - Symbol shows trend of long axis, which is parallel to former glacial ice-flow direction.
- Glacial striation locality** - Arrow shows ice-flow direction inferred from striations on bedrock. Dot marks point of observation. Number is azimuth (in degrees) of flow direction. Where relative ages could be determined, flagged direction is older.
- Dip of cross-bedding** - Arrow shows average dip direction of cross-bedding in fluvial deposits, which indicates direction of current flow. Dot marks point of observation.
- Meltwater channel** - Channel eroded by glacial meltwater stream. Arrow shows inferred direction of former stream flow.
- Area of many large boulders**, where observed. May be more extensive than shown.

USES OF SURFICIAL GEOLOGY MAPS

A surficial geology map shows all the loose materials such as till (commonly called hardpan), sand and gravel, or clay, which overlie solid ledge (bedrock). Bedrock outcrops and areas of abundant bedrock outcrops are shown on the map, but varieties of the bedrock are not distinguished (refer to bedrock geology map). Most of the surficial materials are deposits formed by glacial and deglacial processes during the last stage of continental glaciation, which began about 25,000 years ago. The remainder of the surficial deposits are the products of postglacial geologic processes, such as river floodplains, or are attributed to human activity, such as fill or other land-modifying features.

The map shows the areal distribution of the different types of glacial features, deposits, and landforms as described in the map explanation. Features such as striations and moraines can be used to reconstruct the movement and position of the glacier and its margin, especially as the ice sheet melted. Other ancient features include shorelines and deposits of glacial lakes or the glacial sea, now long gone from the state. This glacial geologic history of the quadrangle is useful to the larger understanding of past earth climate, and how our region of the world underwent recent geologically significant climatic and environmental changes. We may then be able to use this knowledge in anticipation of future similar changes for long-term planning efforts, such as coastal development or waste disposal.

Surficial geology maps are often best used in conjunction with related maps such as surficial materials maps or significant sand and gravel aquifer maps for anyone wanting to know what lies beneath the land surface. For example, these maps may aid in the search for water supplies, or economically important deposits such as sand and gravel for aggregate or clay for bricks or pottery. Environmental issues such as the location of a suitable landfill site or the possible spread of contaminants are directly related to surficial geology. Construction projects such as locating new roads, excavating foundations, or siting new homes may be better planned with a good knowledge of the surficial geology of the site. Refer to the list of related publications below.

OTHER SOURCES OF INFORMATION

- Thompson, W. B., 2003, Surficial geology of the Speckled Mountain 7.5-minute quadrangle, Oxford County, Maine: Maine Geological Survey, Open-File Report 03-5, 9 p.
- Thompson, W. B., and Locke, D. B., 2002, Surficial materials of the Speckled Mountain quadrangle, Maine: Maine Geological Survey, Open-File Map 02-103.
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- Neil, C. D., 2002, Significant sand and gravel aquifers of the Speckled Mountain quadrangle, Maine: Maine Geological Survey, Open-File Map 02-147.
- Thompson, W. B., and Borris, H. W., Jr., 1985, Surficial geologic map of Maine: Maine Geological Survey, scale 1:500,000.